

**EXHIBIT 1**

***Overview of the Licensed Site Remediation Professional (LSRP)  
Program, April 2011***

## **Overview of the Licensed Site Remediation Professional (LSRP) Program**

Created by SRP April 2011

### **Site Remediation Reform Act (SRRA)**

The Site Remediation Reform Act (SRRA, N.J.S.A. 58:10C) set forth sweeping changes to the way in which sites are remediated in New Jersey. SRRA established the affirmative obligation for responsible parties to remediate contaminated sites in a timely manner. In order to achieve this goal SRRA created a category of remediation professionals known as Licensed Site Remediation Professionals (LSRP). LSRPs will “step into the shoes” of the Department of Environmental Protection (Department) to oversee the remediation of contaminated sites in most instances. SRRA requires that the LSRP must comply with all remediation statutes and rules and consider guidance when making remediation decisions.

In order to implement the statute, on November 4, 2009 the Department adopted interim rules. The Administrative Requirements for the Remediation of Contaminated Sites (ARRCS, N.J.A.C. 7:26C), and the Technical Requirements for Site Remediation (Technical Requirements, N.J.A.C.7:26E) as well as updates to several other Department rules were part of those interim rules. Go to <http://www.nj.gov/dep/srp/regs/> for more detailed information about these rules.

Under this new remediation paradigm, in most instances the remediating party need not wait for DEP direction and pre-approvals to commence and continue cleanups. Instead they must initiate and complete the cleanup under the direction of an LSRP, who will have responsibility for oversight of the environmental investigation and remediation. The Department will monitor the remediation progress and the actions of LSRPs by requiring the submittal of forms and reports as remediation milestones are reached.

### **Phase in of the LSRP Program**

SRRA provides a three year phase in period for persons responsible for conducting the remediation to cleanup sites under the new LSRP remediation paradigm. The program will be fully implemented by May 7, 2012. During this phase in period, existing cases (cases where remediation was initiated before November 4, 2009 and are being continuously remediated) can continue under the traditional remediation paradigm with an assigned case manager who will oversee and approve each phase of remediation prior to the person moving on to the next phase, with the goal of receiving a Department issued No Further Action (NFA) determination when all remediation requirements are fulfilled. Alternatively, existing cases may “opt in” to the LSRP program by hiring an LSRP and notifying the Department accordingly. All parties remediating new cases (remediation initiated on or after November 4, 2009) must hire an LSRP and remediate under the new program. **Effective May 7, 2012 when the LSRP program is fully implemented, all remediating parties will be required to retain an LSRP and remediate their site under the new LSRP paradigm, regardless of when the cleanup was initiated.**

### **Roles and Responsibilities**

**The Department’s role in the LSRP program** is to regulate responsible parties through its remediation regulations including ARRCS, Technical Requirements, Underground Storage Tank

rules (N.J.A.C. 7:14B), the Industrial Site Remediation Act rules (N.J.A.C. 7:26B), and the Remediation Standards rules (N.J.A.C. 7:26D). This includes inspecting and reviewing LSRP submittals to ensure that remediation work is completed in accordance with the Department's applicable standards and regulations.

**The Responsible Party's role in the LSRP program** is to remediate contaminated sites in accordance with the Department's applicable standards and regulations. Responsible parties are required to hire LSRPs that will oversee remediations and issue Response Action Outcome letters (RAO) when remediations are complete.

**The LSRP's role in the LSRP program** is to oversee the remediation of contaminated sites in accordance with the Department's applicable standards and regulations for responsible parties. They are subject to a strict code of conduct established by statute and regulation and must ensure that remediations are protective of human health, safety and the environment. The conduct of LSRPs is overseen by the Site Remediation Professional Licensing Board.

**The Site Remediation Professional Licensing Board's role in the LSRP program** is to establish licensing requirements for site remediation professionals and oversee the licensing and performance of site remediation professionals. The vision of the board is to provide an effective licensing program for site remediation professionals that facilitates cleanup of sites in a manner that is protective of public health and safety and the environment, and ensures the competency of Licensed Site Remediation Professionals.

### **Regulatory and Mandatory Time Frames**

**Regulatory time frames** are the time periods specified in the Department's Technical Requirements rules within which all persons responsible for conducting remediation must complete specified remedial activities. Failure to comply with regulatory time frames may result in an enforcement action by the Department. The person may request an extension of a regulatory time frame for good cause by submitting an Extension Request Form to the Department. The remediating party may assume the extension is "granted" unless they hear otherwise from the Department. During the transition period, the Department is utilizing "compliance assistance" (see below) for all new cases and for existing cases that "opt in." This means that the Department will work with persons responsible for conducting the remediation in order to help the person remain in compliance with the Department's remediation rules. However, if after receiving compliance assistance from the Department the person still misses a regulatory time frame or extension thereof, the person may be exposed to enforcement actions and penalties pursuant to the ARRCS rules, N.J.A.C. 7:26C-9.

**Mandatory time frames** are the time periods specified in the Department's ARRCS rules, N.J.A.C. 7:26C-3.3 within which all persons responsible for conducting remediation must complete certain remedial activities. Establishment of these time frames is mandated in SRRA at N.J.S.A. 58:10C-28. Failure to comply with mandatory time frames will make the person conducting remediation subject to direct Department

oversight pursuant to SRRA (see N.J.S.A. 58:10C-27). Currently, there are four rule requirements that have two-year mandatory time frames. These requirements are:

- The submission of a Preliminary Assessment/Site Investigation report, if one is required;
- The submission of an initial Receptor Evaluation Report/Form;
- The initiation of Immediate Environmental Concern (IEC) source control, if an IEC condition is discovered at a site (see IEC Guidance for definition of IEC); and
- The installation and operation of a free product (LNAPL) recovery system, if free product is discovered at a site.

Persons responsible for conducting the remediation may request an extension of a mandatory time frame for good cause as described in the ARRCS rules, N.J.A.C. 7:26C-3.5, by submitting an Extension Request Form to the Department at least 60 days prior to the expiration date. These rules require that the person requesting the extension continue with the remediation until receiving a written response from the Department. As noted above, the violation of a mandatory time frame will expose the remediating party to direct Department oversight. Direct Department oversight requires that a Remediation Trust Fund be established and involves a greater level of Department control over the remediation which is significantly more onerous than the current case manager process. Go to [www.nj.gov/dep/srp/guidance/srra/direct\\_oversight.pdf](http://www.nj.gov/dep/srp/guidance/srra/direct_oversight.pdf) for more information regarding the Department's definition of direct oversight.

### **Expedited Site Specific Time Frames**

SRRA allows the Department to establish expedited site specific time frames at N.J.S.A. 58:10C-28a and the Department has included the regulatory requirements for these at N.J.A.C. 7:26C-3.4. Expedited site specific time frames may be established when the Department determines that expedited action is necessary to protect public health, safety and the environment or based on the compliance history of the remediating party. The remediating party will be notified by the Department when this occurs.

### **Inspection and Review Process**

Under the new LSRP program, every document that is submitted by an LSRP, up to and including a Response Action Outcome (RAO), is inspected by the Department. When certain conditions exist these documents may undergo a more detailed review. The Department is committed to completing these inspections/reviews in a timely manner. To date, the average time to complete the inspection/review of an RAO is less than 30 days.

***It is important to note that an RAO issued by the LSRP is equivalent to the NFA letter issued by the Department.***

### **SRRA “Three Year Reopener” Provision**

Pursuant to N.J.S.A. 58:10C-25, the Legislature directed the Department not to audit a Response Action Outcome (RAO) more than three years after the date the LSRP filed the RAO with the Department, unless:

1. Undiscovered contamination is found on a site for which an RAO has been filed;
2. The Site Remediation Professional Licensing Board conducts an investigation of the LSRP; or
3. The LSRP who issued the RAO has had their license suspended or revoked by the Board. In this case, the RAO can be audited at any time.

As was the case with No Further Action letters, if new information comes to light about a remediated site and the Department determines that the site conditions are no longer protective of public health and the environment, the Department may invalidate the RAO. The details of this process are being developed under the final ARRCS rule.

### **Compliance Assistance**

As noted above, as part of the transition process, the Department is employing a “compliance assistance” approach for new cases and “opt in” cases. This means that in the case review process if there is any question about a report or form submitted to the Department, the inspector and/or reviewer will contact the LSRP by phone or email as needed to discuss and resolve any issue concerning the submittal. While in compliance assistance mode, the Department will not send deficiency letters which could result in multiple rounds of reports and reviews. Instead, the Department has committed to working with LSRPs and persons responsible for conducting remediation to ensure that sites undergoing remediation are protective of public health and the environment. If more technical advice is required the person responsible for conducting the remediation and/or the LSRP can schedule a technical consultation with the Department to address the issues and concerns in a timely manner. Remediating parties that “opt in” may retract existing submittals to the Department and have their LSRP remedy any deficiencies previously identified by the Department. More information about opting in can be found at [http://www.nj.gov/dep/srp/srra/lsp/opt\\_in.htm](http://www.nj.gov/dep/srp/srra/lsp/opt_in.htm), and information regarding technical consultations can be found at [http://www.nj.gov/dep/srp/srra/technical\\_consultation/](http://www.nj.gov/dep/srp/srra/technical_consultation/).

### **Remediation Funding Source and Financial Assurance**

Remediation Funding Sources (RFS) are Department approved financial mechanisms required to be established and maintained to secure the appropriate funding to ensure completion of the remediation at a contaminated site. An RFS is required to be established for industrial establishments being remediated pursuant to ISRA upon the Department’s approval or the LSRP’s certification of a Remedial Action Workplan, or as required pursuant to an ISRA Remediation Agreement or an Administrative Consent Order. The RFS must be maintained until such time as an NFA is issued or an RAO is filed. There is a required annual one percent (1%) surcharge payment associated with the RFS financial mechanisms except for the self-guarantee mechanism. Financial Assurances (FA) are Department approved financial mechanisms required to be established when applying for a Remedial Action Permit that includes engineering

controls to secure the appropriate funding to ensure the maintenance of all engineering controls at a contaminated site. The FA does not require an annual one percent (1%) surcharge payment. The self-guarantee mechanism may not be used to satisfy the FA requirements. There are several remediating parties that are exempt from this requirement. Please go to the following webpage for additional details: <http://www.nj.gov/dep/srp/srra/training/>

### **Due Diligence**

A person who is conducting due diligence at a site is not required to hire an LSRP to perform the due diligence as long as the person:

1. Does not own the site in question;
2. Conducts the preliminary assessment and site investigation (if the preliminary assessment indicates that a site investigation is required) of the site for the purpose of conducting all appropriate inquiry into previous ownership and uses of the property; and
3. Has not discharged a hazardous substance at the site and is not in any way responsible for a hazardous substance discharged at the site.

### **Remediation of Unregulated Heating Oil Tanks (UHOT)**

The owner or operator of an unregulated heating oil tank (UHOT) may choose to hire either an LSRP or a subsurface evaluator certified pursuant to the UST rules (see N.J.A.C. 7:14B). Currently, mandatory time frames do not apply to these cases nor is a preliminary assessment required. The Department is developing regulations specific to UHOT remediation that are expected to be proposed by Summer 2011.

### **Contact Information**

If you have any questions regarding the information contained in this document or any of the SRRA overview materials please contact Karen Ricciardi at 609-292-5299 or by email at [Karen.Ricciardi@dep.state.nj.us](mailto:Karen.Ricciardi@dep.state.nj.us).

You may also consult with your environmental professional to learn more about the LSRP program.

If you have questions on other site remediation topics please use SRP's Contacts list provided at [http://www.nj.gov/dep/srp/srra/srra\\_contacts.htm](http://www.nj.gov/dep/srp/srra/srra_contacts.htm).

### **Disclaimer**

NJDEP has prepared this document to provide general information about the LSRP program. No one should consider this document as a sole source of information sufficient in itself to dictate any outcome or decision on the remediation of a contaminated site. Rather, this material should be utilized as a resource tool to highlight key points of the Site Remediation Reform Act, and the LSRP Program in anticipation of its full implementation in May 2012.

**EXHIBIT 2**

**Letter dated September 12, 2012 approving permanent shutdown  
and removal of SVE (SH-NJ-SCI467567)**



September 12, 2012

Robin Austermann  
Senior Program Manager  
Shell Oil Products US on behalf of Motiva Enterprises LLC  
PMB 534, 100 Springdale Road, Ste. A3  
Cherry Hill, NJ 08003

**Groundwater and Soil Remediation System Shutdown Approval**  
**Monitored Natural Attenuation Implementation – Onsite**  
**Groundwater Sampling Schedule Change Approval**  
**Shell Service Station**  
**657 Franklin Turnpike**  
**Ridgewood, Bergen County, New Jersey**  
**SRP PI: 004739**  
**NJDEP Case ID: 87-06-25-03M**

Dear Ms. Austermann:

Current site conditions have been reviewed at the above referenced site. The site data reviewed included the groundwater sampling results. The results table and a site plan are attached to this correspondence.

Groundwater and Soil Remediation System Shutdown Approval

A request for the temporary shutdown of the onsite groundwater Pump and Treat (P&T) and Soil Vapor Extraction (SVE) systems was proposed by Shell Oil Products US (SOPUS) in February 2009 (**Attachment A**), and was approved by the New Jersey Department of Environmental Protection (NJDEP) in the July 13, 2009 and February 19, 2010 correspondences (**Attachments B and C**).

Groundwater conditions have continued to be monitored under static conditions after the temporary shutdown of the P&T and SVE systems in January 2009 and the groundwater results are summarized in Table 1 (**Attachment D**). At the time of the temporary system shutdown request in February 2009, the groundwater concentrations from the November 2008 groundwater sampling event provided baseline conditions for the temporary system shutdown request. Subsequently, eleven or more quarterly groundwater sampling events have been conducted since the temporary system shutdown in January 2009. A comparison between the November 2008 baseline results and May 2012 (most recent sampling event) are summarized within the following table:

<u>November 2008 GW Concentrations (Baseline)</u>	<u>May 2012 GW Concentrations</u>
Benzene MW-19 = 223 ppb	Benzene MW-19 = 153 ppb
Benzene > GWQS in 6 wells	Benzene > GWQS in 7 wells
Toluene > GWQS in only 1 well MW-19 = 633 ppb All other wells < GWQS	Toluene < GWQS in all wells incl. MW-19
Ethylbenzene > GWQS in only 1 well MW-4 = 1,011 ppb. All other wells < GWQS.	Ethylbenzene > GWQS in 1 well MW-19 = 886 ppb All others wells < GWQS
Xylenes > GWQS in only 2 wells MW-4 = 1,762.7 ppb MW-19 = 3,839 ppb All other wells < GWQS.	Xylenes > GWQS in 2 wells MW-20 = 2,470 ppb. MW-19 = 4,060 ppb All other wells < GWQS.
MTBE > GWQS in only 1 onsite well MW-19 = 164.8 ppb. All other onsite wells < GWQS.	MTBE < GWQS in all onsite wells sampled.
TBA < GWQS in all onsite wells.	TBA < GWQS in all onsite wells sampled.

After the temporary shutdown of the remediation systems, there has not been any significant rebound (including seasonal variations) in groundwater concentration levels, and overall onsite groundwater concentrations have decreased.

A permanent shutdown of the P&T and SVE remediation systems is approved. The remediation of onsite groundwater can be continued via natural attenuation under a Monitored Natural Attenuation program (MNA). The permanent system shutdown and MNA for onsite groundwater is effective as reflected by the existing groundwater sampling results. If onsite groundwater concentrations related to SOPUS/Motiva's historical operations at this site indicate that the onsite groundwater concentrations are no longer reducing or stable, SOPUS shall review and identify the cause of such change(s), and if applicable, shall implement an appropriate interim remedial measure and/or a revised remedial action to mitigate.

#### Groundwater Sampling Schedule Change

The groundwater sampling schedule for MNA can be modified as follows:

- The groundwater (GW) sampling results and trends were reviewed and noted in the following wells:
  - MW-1: GW samples were initially analyzed on 7/14/87 and results from 69 sampling events have been recorded. Concentrations have been below GWQS for the following compounds in, at least, the last 5 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE and TBA. In addition, TICs have been below GWQS for the last 4 consecutive GW monitoring events.
  - MW-2R: GW samples were initially analyzed on 8/29/90 and results from 73 sampling events have been recorded. Concentrations have been below GWQS for the following compounds in, at least, the last 26 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE, and TBA. Additionally, total and individual TICs were below the GWQS for the last 5 consecutive GW sampling events.
  - MW-3R: GW samples were initially analyzed on 7/14/87 and results from 72 sampling events have been recorded. Concentrations have been below GWQS for the following compounds in, at least, the last 24 consecutive GW monitoring events: Benzene, Ethylbenzene, Xylenes, MTBE, and TBA.

consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE, and TBA. Additionally, Benzene and TICs have been below GWQS for at least the last 5 consecutive GW monitoring events.

- MW-4: GW samples were initially analyzed on 7/14/87 and results from 74 sampling events have been recorded. Concentrations have been below GWQS for the following compounds in, at least, the last 9 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE and TBA.
- MW-5: GW samples were initially analyzed on 7/14/87 and results from 74 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 6 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, and TBA.
- MW-8R: GW samples were initially analyzed on 8/24/87 and results from 51 sampling events have been recorded. The monitoring well is currently inaccessible and samples have not been collected since November 2008.
- MW-11: GW samples were initially analyzed on 7/12/88 and results from 64 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 43 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, and TBA. Additionally, total and individual TICs were ND for the last 5 consecutive rounds of sampling.
- MW-14: GW samples were initially analyzed on 9/11/90 and results from 27 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 20 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE, and TBA. Additionally, total and individual TICs were below GWQS during the last 7 GW monitoring events.
- MW-19: GW samples were initially analyzed on 5/15/95 and results from 61 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 11 consecutive GW monitoring events: MTBE, and TBA. Additionally, Toluene was below the GWQS in for the last 5 consecutive GW monitoring events.
- MW-20: GW samples were initially analyzed on 5/15/95 and results from 58 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 19 consecutive GW monitoring events: Toluene, MTBE, and TBA. Additionally, ethylbenzene and xylenes, while detected above GWQS in the most recent sampling event (May 2012) have been below GWQS for the prior 38 consecutive sampling events.
- MW-21: GW samples were initially analyzed on 12/16/96 and results from 44 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in, at least, the last 21 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, and TBA. Additionally, total and individual TICs were ND or below the GWQS in the last 6 consecutive GW monitoring events.
- MW-22: GW samples were initially analyzed on 12/16/96 and results from 50 sampling event have been recorded. Concentrations have been historically below GWQS for the following compounds in all historical GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, TBA and TICs.
- MW-25: GW samples were initially analyzed on 5/19/97 and results from 54 sampling events have been recorded. Concentrations have been historically below GWQS for the following compounds in all eighteen consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE and TBA.
- MW-26: GW samples were initially analyzed on 5/19/97 and results from 53 sampling event have been recorded. Concentrations have been historically below GWQS for the following compounds in all 14 consecutive GW monitoring events: Ethylbenzene, MTBE and TBA. Additionally, Toluene, Xylenes and TICs have been below GWQS for at least 2 consecutive GW monitoring events.
- MW-27B (D): GW samples were initially analyzed on 9/7/01 and results from 32 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in at least 19 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, and TBA. Additionally, TICs have been below GWQS for the last 7 consecutive GW monitoring events, and MTBE has been below GWQS for the last 2 consecutive GW monitoring events.
- MW-27C (S): GW samples were initially analyzed on 9/7/01 and results from 32 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in all 32 consecutive GW monitoring events: Toluene, Ethylbenzene and Xylenes. Additionally, Benzene has been below GWQS for the last 20 consecutive GW monitoring events and TICs have been below GWQS for 7 consecutive monitoring events.

- MW-28: GW samples were initially analyzed on 11/5/87 and results from 62 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in all 62 consecutive GW monitoring events: Toluene, Ethylbenzene and Xylenes. Additionally, MTBE and TBA have been below GWQS for at least the last 26 consecutive GW monitoring events, and Benzene has been below GWQS for the last 5 consecutive monitoring events. TICs concentrations were below GWQS during the most recent sampling event.
- MW-33B (D): GW samples were initially analyzed on 9/7/01 and results from 33 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in at least 28 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene and Xylenes. Additionally, TICs have been below GWQS for 7 consecutive GW monitoring events.
- MW-33C (S): GW samples were initially analyzed on 9/7/01 and results from 33 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds in at least 28 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene and Xylenes. Additionally, TBA has been below GWQS for the last 18 consecutive GW monitoring events, and TICs have been below GWQS for 7 consecutive GW monitoring events. MTBE has been below GWQS for the past two consecutive GW monitoring events.
- MW-37Z6: GW samples were initially analyzed on 9/7/01 and results from 31 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 31 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene and Xylenes. Additionally, MTBE and TBA have been below GWQS for at least the last 16 consecutive GW monitoring events, and TICs have been ND for 7 consecutive GW monitoring events.
- MW-37Z7: GW samples were initially analyzed on 9/7/01 and results from 31 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 31 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene and Xylenes. Additionally, MTBE and TBA have been below GWQS for at least the last 13 consecutive GW monitoring events, and TICs have been below GWQS for 7 consecutive GW monitoring events.
- MW-39: GW samples were initially analyzed on 5/28/98 and results from 42 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 42 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes and TBA. Additionally, Benzene and MTBE have been below GWQS for at least the last 33 consecutive GW monitoring events, and TICs have been ND for 6 consecutive GW monitoring events.
- MW-40: GW samples were initially analyzed on 5/28/98 and results from 44 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 44 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene and Xylenes. Additionally, MTBE and TBA have been below GWQS for at least the last 13 consecutive GW monitoring events, and TICs have been below GWQS for 7 consecutive GW monitoring events.
- MW-43Z7: GW samples were initially analyzed on 3/4/02 and results from 28 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for at least 26 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE and TBA. Additionally, TICs have been below GWQS for 7 consecutive GW monitoring events.
- MW-48: GW samples were initially analyzed on 2/26/01 and results from 28 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 28 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes, MTBE and TBA. Additionally, TICs have been ND for 7 consecutive GW monitoring events.
- MW-49: GW samples were initially analyzed on 5/4/01 and results from 31 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 31 consecutive GW monitoring events: Benzene, Toluene, Ethylbenzene, Xylenes and TBA. Additionally, MTBE has been below GWQS for the last 18 consecutive GW monitoring events, TICs have been below GWQS for 7 consecutive GW monitoring events.
- MW-51: GW samples were initially analyzed on 2/27/01 and results from 38 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for at least 9 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE and TBA.
- MW-52: GW samples were initially analyzed on 2/27/01 and results from 36 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for all 36

consecutive GW monitoring events: Toluene, Ethylbenzene, MTBE and TBA. In addition, Xylenes have been below GWQS for the last 6 consecutive GW monitoring events.

- o **MW-59:** GW samples were initially analyzed on 5/12/04 and results from 23 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for at least 10 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes and TBE. In addition, Benzene and TBA have been below GWQS for the last 2 consecutive GW monitoring events.
- o **MW-61:** GW samples were initially analyzed on 5/2/06 and results from 18 sampling events have been recorded. Concentrations have been below GWQS historically for the following compounds for at least 7 consecutive GW monitoring events: Toluene, Ethylbenzene, Xylenes, MTBE and TBE.

After review of the sampling results in these wells, the historical GW data and current concentrations within these wells, full sampling analysis of VO+10, MTBE, TBA by 8260B and lead by 6010C for every well is not required. These wells may be reduced in sampling (per below) until the final sampling event for closure of the site is conducted. Any well no longer being sampled should not be abandoned or removed. Due to the number of other wells and their locations within the monitoring network for this site, there remains an adequate number of wells in which sampling is to be continued that will provide adequate and appropriate monitoring for the GW plume source area, sidegradient, upgradient and downgradient (sentinel) for this site.

- The following wells can be sampled annually in May as follows:

- o **MW-2R:** Benzene only
- o **MW-4:** VO TICs only
- o **MW-5:** VO TICs only
- o **MW-14:** Benzene only
- o **MW-19:** Benzene, Ethylbenzene, Xylenes and VO TICs
- o **MW-20:** Benzene, Ethylbenzene, Xylenes and VO TICs
- o **MW-25:** Benzene and VO TICs
- o **MW-26:** Benzene, Toluene, Xylenes
- o **MW-27B (D):** MTBE and PCE
- o **MW-27C (S):** MTBE and TBA
- o **MW-33B (D):** MTBE and TBA
- o **MW-33C (S):** MTBE
- o **MW-51:** Benzene and VO TICs
- o **MW-52:** Benzene and VO TICs
- o **MW-54B (D):** MTBE and TBA
- o **MW-54C (S):** MTBE and TBA
- o **MW-59:** Benzene, TBA and VO TICs
- o **MW-61:** Benzene and VO TICs

This sampling schedule change is only effective for groundwater monitoring reflected by existing groundwater sampling results. The sampling schedule shall be modified if site conditions or groundwater results indicate the groundwater plume is no longer reducing or stable.

If you have any questions, please contact me at (973) 439-5757 or jdavies@sovcon.com.

Sincerely,



Julian J. Davies, LSRP  
Senior Project Manager  
Licensed Site Remediation Professional # 574051

Attachments:

- A. Remedial Action Progress Report Addendum/Remediation System Shutdown Request (February 2009)
- B. Remedial Action Progress Report (RAPR) Addendum Approval, NJDEP Correspondence (July 13, 2009)
- C. Remedial Action Progress Report (RAPR's) Approval and Classification Exception Area (CEA) Biennial Certification Approval, NJDEP Correspondence (February 25, 2010)
- D. Groundwater Elevation and Concentration Data Table

cc: Kirstin Pointin-Hahn, Bureau Chief, NJDEP Bureau of Case Assignment and Initial Notice (w/o encl.)  
Linda Grayson, Bureau Chief, NJDEP Bureau of Enforcement & Investigations (w/encl.)  
Municipal Clerk, Village of Ridgewood (w/encl.)  
Health Officer, Bergen County Department of Health (w/encl.)  
Suzanne Banks, Project Manager, Sovereign Consulting Inc. (w/encl.)  
LSRP File



**Remedial Action Progress Report Addendum  
Remediation System Shutdown Request  
February 2009**

**Shell Service Station  
657 Franklin Turnpike & Route 17 South  
Ridgewood, Bergen County, New Jersey**

**Submittal date:** 2/9/09  
**Submitted to:** Martha Goodwin, Case Manager, NJDEP-BOMM,  
401 East State Street, P.O. Box 413, Trenton, NJ 08625, (609) 984-0872  
**Submitted by:** Buddy Bealer, Senior Project Manager, Shell Oil Products US (SOPUS)  
on behalf of Motiva Enterprises LLC  
PO Box 152, Nazareth, PA, 18064, (610) 759-5359

**Reporting Period** January 2009  
**SRP PI#** 004739  
**NJDEP Case#** 87-06-25-03M, 95-02-23-1341, 98-06-17-0832-20, 06-02-23-1845-07  
**UST#** 0047397  
**SAP#** 138490  
**CV Rank:** 3  
**RAW Status:** RAW approved 3/28/06 (P&T/SVE onsite and NRCP offsite)  
**CEA Status:** CEA# 137967(1/18/06); Last CEA biennial cert submitted 1/11/08;  
next CEA biennial cert due 1/18/10  
**Latest DEP Response:** Correspondence dated 10/27/08 (RAPR approval)  
**Sampling Frequency:** Semi-Annual (May, Nov)  
**Reporting Frequency:** Semi-Annual (Jan, Jul)  
**Geology:** 25' of glacial sediments, medium silt, sand, gravel; Bedrock at 30'  
**Hydrogeology:** 0.01 feet/foot, flow direction to the south/southeast  
**Depth to GW:** Approximately 20.0-25.0 feet below grade  
**Potential Receptors:** Municipal supply wells located < 1,000 feet from the site

#### **Introduction**

This addendum report is being submitted as an addendum to the January 2009 Remedial Action Progress Report (RAPR), to update current site conditions as off January 2009 and to request a temporary active remediation system shutdown.

#### **Remediation System Status**

The active remediation systems (SVE & P&T) were operated in January 2009. Abnormal freezing weather conditions in January 2009 resulted in the freezing of remediation system piping as follows:

1. **P&T system:** System piping within the building became frozen and burst. The system piping (within the building) became frozen despite heat trace & two (2) electric space heaters within the building which were in operation during this freezing period. The electric heaters and piping heat trace were operational during the system O&M visits. Three (3) possible reasons for piping freezing within the building have been identified, and include the uncommonly extremely low temperatures (overnight near or below 0°F) which we experienced in northern New Jersey during mid and late January 2009, the building heaters are convection air heaters and an uneven distribution of heat within the building created "less heated or colder" spots within the building, and the building insulation (due to age and wear and tear) was not adequate for the types of overnight temperatures. Additional

freezing effects are indicated within the piping fittings of the granular activated carbon (GAC) units, and their operational integrity and treatment capacity may have been comprised.

2. **SVE system:** A broken valve was found on SVE recovery line from MW-5. It appears condensate on closed valve for MW-5 on the SVE header froze and split the valve.

The freezing affects and system shutdown were identified during the week of January 26, 2009 site visits. The SVE system continued operation, but the damage to the P&T system was too extensive and the system cannot be restarted without major system re-construction work.

### Remediation System Shutdown Request

#### Operational Summaries:

**P&T:** The groundwater P&T system has operated in various configurations since September 1990. Currently, groundwater is extracted from thirteen recovery wells (onsite wells MW-4, MW-5, MW-19, MW-25, MW-26, MW-28, MW-51, MW-52, MW-59, MW-61 and offsite wells MW-2R, MW-3R and MW-8R) and treated via air stripping and granular activated carbon adsorption prior to discharge to the sanitary sewer.

Over the operational lifetime of the P&T system, approximately 57M gallons treated groundwater has been discharged. A summary of system operation results (**Table 1**) through the various operational periods of the system is summarized in the table below:

Operational Period	Sep 90 - Jan 02	Oct 95 - May 98	Jun 98 - Jan 02	Mar 02 - Dec 07	2008	Comments
<b>P&amp;T Extraction Wells</b>	1, 4, 5, 8, 8A(RW-2), 8B(RW-3)	4, 5, 6, 25	4, 5, 25, 28	2, 3R, 4, 5, 8R, 19, 25, 26, 28, 51, 52, 57R (61), 59	2, 3R, 4, 5, 8R, 19, 25, 26, 28, 51, 52, 57R (61), 59	
<b>P&amp;T Flow</b>	gals (total)	1,179,071	1,122,267	12,949,514	39,638,962	2,110,186
<b>Influent P&amp;T System Concentration</b>						
Average BTEX	ppb	17,884	13,232	3,544	1,517	1,057
Maximum BTEX	ppb	50,700	22,581	18,950	9,332	2,157
<i>Current BTEX (Dec 08)</i>	ppb	NA	NA	NA	NA	<i>538</i>
Average MTBE	ppb	-	2,171	5,121	165	7.2
Maximum MTBE	ppb	-	19,500	105,000	6,830	17.2
<i>Current MTBE (Dec 08)</i>	ppb	NA	NA	NA	NA	<i>4.2</i>
<b>Average VOC Mass Removal Rates (gal/LPH/day)</b>		-	0.0167	0.1082	0.0435	<b><i>0.0109</i></b>

These results indicate that the P&T system VOC mass removal rates have attained asymptotic levels. The influent VOC concentrations are below the GWQS for all compounds, with only benzene concentrations recorded above the GWQS. The influent benzene concentrations for December 2008 are 6.5 ppb. And throughout 2008 the influent benzene concentrations ranged from 20.8 ppb to 3.2 ppb. Influent MTBE concentrations have been below the GWQS since

January 2006. The influent VOC concentrations for the P&T system are reflected in the groundwater sampling results.

**SVE:** The SVE system was restarted in June 2004. The SVE system was reconstructed and extraction was initial conducted from eighteen (18) wells (2,3R, 4, 5, 8R, 19, 25, 26, 28, 51, 52, 57R (61), 59, S-2, SVE-1, SVE-2, SVE-3, SVE-4). As SVE system operation continued and influent concentrations reduced, the number of SVE extraction wells have been reduced and currently there are six (6) wells (4, 19, 26, 52, 59, 61) being utilized. Extracted soil vapor has been treated via either a catalytic oxidized or granular activated carbon (GAC). SVE system operation metrics (**Table 2**) during this period of SVE operation can be summarized as follows:

- A total of 329,560,349 cubic feet of soil vapor has been extracted.
- A total of 735.5 lbs of VOCs have been recovered and treated.
- Maximum SVE VOC extraction rate was recorded at 0.459 lbs/hr. Current VOC extraction rate in December 2008 is 0.001 lbs/hr.
- 2008 SVE VOC extraction rates ranged from 0.068 to 0.001 lbs/hr
- Influent VOC concentrations have been ND/below detection limits since April 2007.

Influent SVE concentrations are ND/below detection limits, and there are not any source concentrations for treatment by the SVE system.

#### Groundwater Concentrations

Groundwater concentrations (**Table 3**) in wells have decreased. The most recent groundwater sampling event was conducted in November 2008, and the onsite sampling results indicate:

- Highest benzene concentration is 223 ppb (MW-19). Benzene is detected above the GWQS in only 6 wells.
- Toluene is detected above the GWQS in only 1 well (MW-19). All other wells are below the GWQS.
- Ethylbenzene is detected above the GWQS in only 1 well (MW-4). All other wells are below the GWQS.
- Xylenes are detected above the GWQS in only 2 well (MW-4, MW-19). All other wells are below the GWQS.
- MTBE detected above the GWQS in only 1 onsite well (MW-19 @ 164.8 ppb). All other onsite wells are below the GWQS.
- TBA is below the GWQS in all onsite wells.

Groundwater concentration reductions are also highlighted in groundwater concentration graphs (**Graph 1 through 4**), and the reduction in size of the groundwater concentration plume is also highlighted within the groundwater isopleths maps submitted within RAPR reports. The isopleths maps for the most recent event in November 2008 are provided in the January 2009 RAPR.

The onsite groundwater sampling results correlate with the remediation system influent data discussed above, and support that the concentration levels are lower than required for treatment by the active remediation systems.

#### Remediation System Shutdown Request Proposal

**P&T:** SOPUS requests a temporary shutdown of the groundwater P&T system for a period of two (2) years as a pilot program to assess groundwater concentrations and site results under static (non-pumping) conditions. SOPUS proposes to conduct the following for the duration of the pilot program:

- Currently site-wide groundwater sampling is conducted semi-annually in May and November.

- Throughout the system shutdown period SOPUS proposes to conduct additional groundwater sampling for the groundwater extraction wells to monitor groundwater concentrations within those wells as follows:
- Quarterly groundwater sampling of P&T system extraction wells, MW-2R, MW-3R, MW-4, MW-5, MW-8R, MW-19, MW-25, MW-26, MW-28, MW-51, MW-52, MW-59, MW-61 – February, May, August, November.
- VO+10, MTBE, TBA in May
- BTEX, MTBE, TBA in February, August, November
- Groundwater concentrations within the P&T extraction wells will be reviewed and assessed annually as part of the remedial effectiveness evaluation (REE) within the July RAPR with recommendations.

SVE: SOPUS requests a temporary shutdown of the SVE system throughout the duration of the pilot program.

SOPUS would like to note to the Department that the active remediation system will not be dismantled during this shutdown pilot program and the system components will remain in-place.

Revised Proposed Schedule

Action	Sample Schedule /Submittal Date	Sample Location	Sample Parameters
Groundwater Monitoring	Semi-annual (May, Nov)	<u>May</u> 1, 2R, 3R, 4, 5, 8R, 11, 14, 19, 20, 21, 22, 25, 26, 27B, 27C, 28, 33B, 33C, 37Z6, 37Z7, 39, 40, 43Z7, 48, 49, 51, 52, 59, 60, 61  <u>Nov</u> 1, 2R, 3R, 4, 5, 8R, 14, 19, 20, 22, 25, 26, 27B, 27C, 28, 33B, 33C, 37Z6, 37Z7, 39, 40, 51, 52, 59, 61	VO+10, MTBE, TBA, D.O., Ph  BTEX, MTBE, TBA, D.O., pH
GW Sampling – System Wells (Pilot Program)	Semi-annual (Feb, Aug) 2009 - 2010	MW-2R, 3R, 4, 5, 8R, 19, 25, 26, 28, 51, 52, 59, 61	BTEX, MTBE, TBA
RAPR	Semi-Annual (Jan, Jul)	-	-
Remedial Effectiveness Evaluation (REE)	Annual (included in July RAPR)	-	-

**Attachments:**

Table 1: Groundwater P&T Remediation System Operation Data  
Table 2: SVE System Operation Data  
Table 3: Groundwater Elevation and Concentration Data

Graphs 1: Onsite BTEX vs. Time  
Graphs 2: Onsite MTBE vs. Time  
Graphs 3: Offsite BTEX vs. Time  
Graphs 4: Offsite MTBE vs. Time

Prepared/Certified by: \_\_\_\_\_



**Sovereign Consulting Inc.**  
Suzanne Banks  
Environmental Scientist

**Sovereign Consulting Inc.**  
Julian Davies  
Senior Project Manager  
UST Certification #: 0022231



**State of New Jersey**

Jon S. Corzine  
Governor

Department of Environmental Protection

Mark N. Mauriello  
Acting Commissioner

Bureau of Operations, Maintenance & Monitoring  
401 East State Street  
P.O. Box 413  
Trenton, NJ 08625-0413  
Phone #: 609-984-2990  
Fax #: 609-633-2360

July 13, 2009

Mr. Buddy Bealer  
Shell Oil Products US  
P.O. Box 152  
Nazareth, PA 18064

**Remedial Action Progress Report (RAPR) Addendum Approval**

Re: Shell Service Station #138490  
657 Franklin Turnpike, Ridgewood, Bergen County  
SRP PI# 004739 Activity Number Reference: PFR060001  
Case Name/Number: 87-06-25-03M BUST C2  
RAPR Addendum Dated February 9, 2009

Dear Mr. Bealer:

The New Jersey Department of Environmental Protection (Department) has completed review of the above referenced RAPR Addendum. The Department has determined that the RAPR Addendum is in compliance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E and other applicable requirements. The Department hereby approves the RAPR Addendum, effective the date of this letter. However, the Department is concerned about contamination leaving the site; specifically monitor well MW-2R, which displayed an increase in contamination on November 18, 2008. Thus, Shell should find a way to mitigate this additional contamination. Perhaps bringing the pump and treat system back on-line in less than a two year time frame.

Pursuant to the schedule applicable to the site you shall submit the next RAPR, covering the period of January 1, 2009 through June 30, 2009, by July 31, 2009. Please submit the document by that date, or submit a written request for an extension at least 2 weeks prior to the due date. Failure to submit the RAPR in accordance with the schedule may result in the initiation of enforcement action. For your convenience, the regulations concerning the Department's remediation requirements can be found at <http://www.state.nj.us/dep/srp/regs/>.

If you require copies of Department Guidance Documents or applications, many of these are available on the internet <http://www.state.nj.us/dep/srp>. If you have any questions regarding this matter, please contact me at (609) 292-0543.

Sincerely,

Martha Goodwin, Site Manager

Bureau of Operations, Maintenance & Monitoring

c: Mr. Julian Davies, Sovereign Consulting, Inc.  
Ms. Atiya Wahab, NJDEP



RECEIVED  
3-8-10

**State of New Jersey**

CHRIS CHRISTIE  
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BOB MARTIN  
Acting Commissioner

KIM GUADAGNO  
Lt. Governor

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401 East State Street  
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February 25, 2010

Mr. Buddy Bealer  
Senior Project Manager  
Motiva Enterprises LLC  
P.O. Box 152  
Nazareth, PA 18064

**Remedial Action Progress Reports (RAPR's) Approval and Classification  
Exception Area (CEA) Biennial Certification Approval**

Re: Shell Service Station #138490  
657 Franklin Tpke  
Ridgewood, Bergen County  
SRP PI# 004739  
Activity Number Reference: PFR060001  
Case Name/Number: 89-06-25-03M a/k/a 99-05-31-2126  
Remedial Action Progress Report Dated: July 31, 2009, Received: August 5, 2009  
CEA Biennial Certification Dated: January 11, 2010, Received: January 13, 2010  
Remedial Action Progress Report Dated: January 31, 2010, Received: February 1, 2010

Dear Mr. Bealer:

The New Jersey Department of Environmental Protection (Department) has completed review of the two (2) RAPR's and the CEA Biennial Certification dated and received as referenced above from Shell Oil Products US (SOPUS). The Department has determined that both the RAPR's and the CEA are in compliance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E and other applicable requirements. The Department hereby approves these documents, effective the date of this letter.

**RAPR's**

The Department has noted that the most recent analytical data has shown that ground water recovery well MW-2R has exhibited dissolved contaminants above the Ground

Water Quality Standards only for benzene and that there is no longer evidence of a significant increase in contamination during the last two (2) reporting periods, in fact, there has been a decrease in contamination. Therefore, the Department concurs that SOPUS has sufficiently addressed the Department's concerns regarding MW-2R as outlined in the Department's July 13, 2009 correspondence. At this time, based upon the recent analytical data presented, the Department also concurs with the proposal by SOPUS to continue with the shut down of the pump and treat and soil vapor extraction systems and to continue to evaluate and assess trends in the dissolved contamination under static (non-pumping) conditions for the year 2010.

Pursuant to the schedule applicable to the site you shall submit the next Remedial Action Progress Report covering the period of January 1, 2010 through June 30, 2010, by July 31, 2010. Please submit the document by that date, or submit a written request for an extension at least 2 weeks prior to the due date. Failure to submit the RAPR in accordance with the schedule may result in the initiation of enforcement action. For your convenience, the regulations concerning the Department's remediation requirements can be found at <http://www.state.nj.us/dep/srp/regs/>.

### **Public Notice**

The Department acknowledges receipt of your Public Notification pursuant to N.J.A.C. 7:26E-1.4(h) in the form of periodic notification letters pursuant to N.J.A.C. 7:26E-1.4(j). The Department hereby approves the Public Notification as submitted.

### **CEA Biennial Certification**

Please be advised that the Department has completed its review of Shell Oil Products US's CEA Biennial Certification as referenced above and finds it to be acceptable in accordance with N.J.A.C. 7:26E-8. The contaminants included within the CEA remain the same and the duration of the CEA continues to be estimated for an indeterminate number of years due to the contaminant included in the CEA.

Pursuant to the schedule applicable to the site you shall submit the next CEA Biennial Certification by January 18, 2012. Please submit the document by that date, or submit a written request for an extension at least 2 weeks prior to the due date. Failure to submit the CEA Biennial Certification in accordance with the schedule may result in the initiation of enforcement action. For your convenience, the regulations concerning the Department's remediation requirements can be found at <http://www.state.nj.us/dep/srp/regs/>.

If you require copies of Department Guidance Documents or applications, many of these are available on the internet <http://www.state.nj.us/dep/srp>.

If you have any questions regarding this matter please temporarily contact David N. Miele, Case Manager/Inspector at (609) 984-2990 prior to the date indicated.

Sincerely,



Donald Kakas, Section Chief  
Bureau of Operation Maint & Monitoring

cc: David N. Miele, Case Manager/Inspector  
Julian Davies, Sovereign Consulting, Inc.

## Classification Exception Area/Well Restriction Area

### Case Information

<u>Subject Item</u>	<u>Designation</u>
CEA100037967	87-06-25-03m

**Case ID:** 004739 - USR000001

**Preferred Id:** 004739

**Case:** Shell Service Station #229-7170-0301

**Address:** 657 Franklin Tpke

**City:** Ridgewood Village **County:** Bergen

### Lot and Block of the Case

<u>Block</u>	<u>Lot</u>
4703	14

See Exhibit A [Site Location Map]

### Lot and Block of the CEA

<u>Subject Item</u>	<u>Block</u>	<u>Lot</u>	<u>Municipality</u>
CEA100037967	3003	18	Ridgewood Village
CEA100037967	4703	14	Ridgewood Village

### Facility Contact

**Agent:** DOUG WEIMER  
**Company:** MOTIVA  
**Address:** 3800 PICKET ROAD  
  
FAIRFAX, VA 22031

**Responsible Party:** Chris Jones  
**Company:** Motiva Enterprises Llc  
**Address:** 520 Allens Ave  
Providence, RI 02905

**DEP** Donna Plummer  
(609)633-6839

Department Oversight Document: 3-17-06

### CEA Information

<u>Subject Item</u>
CEA100037967

### Description

The CEA extends from the site to Valley Valleau Cemetery

<u>Subject Item</u>	<u>Affected Aquifer</u>	<u>Vertical Depth</u>
CEA100037967	Passaic Formation	200

<u>Subject Item</u>	<u>Classification</u>
CEA100037967	II-A

### Contaminant

This CEA/WRA applies only to the contaminants listed in the table below. The ground water quality criteria / primary drinking water standards for these contaminants are listed in parts per billion (ppb). All constituents standards (N.J.A.C. 7:9:9-6) apply at the designated boundary.

<u>Subject Item</u>	<u>Contaminant</u>	<u>Concentration 1</u>	<u>GWQS</u> <input type="checkbox"/>
CEA100037967	Benzene	484 Micrograms Per Liter	1 Micrograms Per Liter
CEA100037967	Methyl tert-butyl ether	91 Micrograms Per Liter	70 Micrograms Per Liter
CEA100037967	Xylenes (total)	2120 Micrograms Per Liter	1000 Micrograms Per Liter

### Site

Note:       Maximum concentration detected at the time of CEA establishment  
 Ground Water Quality Standards

### CEA Boundaries:

horizontal	See Exhibit B (CEA/WRA Location Map)
vertical	See Exhibit B (CEA/WRA Location Map)
	Included in affected aquifer above

### Projected Term of CEA:

<u>Subject Item</u>	<u>Date Established</u>
CEA100037967	1/18/2006

<u>Subject Item</u>	<u>Duration in Years</u> (999 is equivalent to "indeterminate" duration)
CEA100037967	999

<u>Subject Item</u>	<u>Date Lifted</u>
CEA100037967	

### Comment

Note Since groundwater quality data indicates exceedance of contaminants above the Primary Drinking Water Standards, and the designated uses of Class II-A aquifers include potable use, the CEA established for this site is also a Well restriction Area. The extent of Well Restriction shall coincide with the boundaries of the CEA

### Well Restrictions set within the boundaries of the CEA

<i>Subject Item</i>	<i>Restriction</i>
CEA100037967	Double Case Wells: With the exception of monitoring wells installed into the first water bearing zone, any proposed well to be installed within the CEA/WRA boundary shall be double cased to an appropriate depth in order to prevent any vertical contaminant migration pathways. This depth is either into a confining layer or 50 feet below the vertical extent of the CEA.
CEA100037967	Sample Potable Wells: Any potable well to be installed within the footprint of the CEA/WRA shall be sampled annually for the parameters of concern. The first sample shall be collected prior to using the well. If contamination is detected, contact your local Health Department. If the contamination is above the Safe Drinking Water Standards, then the NJDEP Hot Line should be called. Treatment is required for any well that has contamination above the Safe Drinking Water Standards.
CEA100037967	Evaluate Production Wells: Any proposed high capacity production wells in the immediate vicinity of the CEA/WRA should be pre-evaluated to determine if pumping from these wells would draw a portion of the contaminant plume into the cone of capture of the production wells or alter the configuration of the contaminant plume.

#### **Site Specific Well Restrictions**

<i>Subject Item</i>	<i>Restriction</i>
CEA100037967	